

## FIBROLIPOMA OF STOMACH.

REMOVAL BY RESECTION OF STOMACH; CONVALESCENCE  
COMPLICATED BY TETANY.

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SURGEONS are very rarely confronted with benign tumors of the stomach which are of non-inflammatory origin. They do not come to operation because in the majority of cases they are small and give rise to no symptoms. The benign tumors that are met with in the stomach are fibromata, fibrolipomata, lymphadenomata, and myomata. The last of these is probably the most frequent variety. Steiner,<sup>1</sup> who collected 51 cases of myomata of the gastro-intestinal tract, found 21 of the stomach. They arise from the muscularis, and grow either into the lumen of the stomach or towards the abdominal cavity. These tumors may attain a considerable size, and then give rise to symptoms merely because of their bulk. They may become inflamed or ulcerate, and thus create discomfort or even pain. Usually, they occur either at the larger or lesser curvature, and more rarely at the pyloric end. The diagnosis of benign neoplasm of the stomach is a difficult one. If they are palpable, and if they are known to have increased but slowly without interference with either the function of the stomach or the general health of the patient, the diagnosis can be made. Fibromata and fibrolipomata are usually small and produce no symptoms unless they become inflamed. However, I have been unable to find any cases recorded in literature in which an inflammation of such tumors has given rise to sufficient symptoms that warranted operation. I, therefore, may be permitted to report the following case that came under observation in the German Hospital. This case represents another interesting feature, namely, the development of tetany seventeen days after operation.

Mary S., thirty-seven years of age, was admitted to the hospital on February 23, 1904. Since January 17, 1904, she has suffered from attacks of pain in the abdomen, which occurred only during the day. The pain was of a dull aching character and varied considerably as to its site. Two weeks ago her physician found a small epigastric hernia and ordered an abdominal binder. This gave her no relief, the pains became more severe and localized in the epigastrium. Three days ago there was an acute attack of pain in the left umbilical region. It grew steadily worse, being sufficiently severe as to prevent her from sleeping. She has no nausea, and never vomited and has no cough.

*Status Præsens.*—Fairly well nourished, anæmic looking girl with club-shaped fingers. Over the apex of the right lung there is some dulness, with a little exaggerated and high-pitched expiration, but the lungs are otherwise normal. The heart is normal. When patient coughs, a small soft mass protrudes in the linea alba, about one-fourth of an inch above umbilicus. It is of the size of a cherry and easily reducible, the hernial opening admitting the tip of a finger. In the left hypochondrium just below the ninth rib there is a point of considerable tenderness; the left rectus abdominis muscle is very rigid, but no definite mass is palpable. The right kidney is movable and can easily be felt. The left kidney cannot be palpated. On February 25, a splashing sound can be elicited just above and to the left of the umbilicus. Over this area tenderness persists. Lavage of the fasting stomach and after administration of Ewald's test-meal reveals normal conditions. But if the stomach is distended with water the pain becomes more severe, and lets up somewhat when the water is withdrawn.

As the pains did not subside by rest in bed and careful dieting, it was decided to operate the epigastric hernia, on the assumption that it was probably the main cause of her suffering, and at the same time to carefully explore the stomach.

Through the kindness of Dr. O. Kiliani, the case was referred to me for operation.

I operated on the patient on the 29th of February. A 5-centimetre incision was made in the linea alba over the hernia. On opening the sac, it was found to contain a small portion of adherent omentum. The adhesions were severed and the omentum replaced. On opening the abdomen, the stomach was found to be

freely movable. The greater curvature, fundus, and pylorus were normal. On the anterior wall of the stomach and encroaching on the lesser curvature, there was found a hard red mass, the size of a large walnut, projecting somewhat from the stomach wall. The serous covering was of a dull red color and showed a number of dilated blood-vessels running towards the mass. The lesser omentum was thickened by inflammatory processes and closely adherent to the mass. On palpation the tumor seemed to involve the whole thickness of the stomach wall. The picture presented the appearance of an ulcer at the lesser curvature about to perforate. I therefore decided to excise the inflamed area, and resected a V-shaped piece of the anterior and posterior stomach wall, including the tumor. The cut edges were then sutured in the usual way. Examination showed that the mass originated from the muscular coat, the mucous membrane being entirely normal. The microscopical examination made by Dr. Weil showed the tumor to be a fibrolipoma with inflammatory changes and hæmorrhages in its substance. For the first ten days the patient was nourished by means of nutrient enemata and by small quantities of fluid per mouth, which were gradually increased until the fourteenth day, when she took solids the first time.

On the 17th of March, seventeen days after operation, she was suddenly seized with a severe paroxysm of pain during the night, located in the upper part of the abdomen and left hypochondrium. At 3.30 in the morning she had a typical attack of tetany. The spasms were limited to the upper extremities. The wrist-joint became gradually flexed to an angle of over  $90^{\circ}$ , more marked on the right side. There was a moderate flexion at the metacarpophalangeal joints, whereas the phalanges were extended. The thumb was adducted and flexed into the palm of the hand. The elbow-joint was flexed to about  $45^{\circ}$ . There was a visible intermittent contraction of all muscles of forearm, arm, and the pectoral muscles, without, however, producing any motion in the joints. After fifteen minutes' duration there could be noticed a gradual relaxation of the muscles on the left side; but the fibrillary twitchings still continued. Tapping of cheek just under malar bone and in front of lobule of ear over the facial nerve produced contractions of orbicularis oris and drawing up of the angle of the mouth on the same side (Chvostek's symptom). There was a slight relaxation of the right elbow after nineteen

minutes. Tetanic condition of right hand remained the same. After twenty-two minutes there was an almost complete relaxation on both sides. The fibrillary twitchings, however, in the affected muscles were still present. After subsidence of the entire attack, we could easily produce a new tetanic condition of one arm by pressure upon vessels and nerves (Trousseau's phenomenon). Compression for one minute produced at first flexion at wrist, then at metacarpophalangeal joints and phalanges, and within two minutes a marked contraction at the elbow was brought about, being accompanied by considerable pain. This tetanic condition, produced by pressure of the brachial vessels and nerves, was even more pronounced than the spontaneous tetanic spasms. There was a marked adduction of the phalanges, the ring and little fingers being overlapped dorsally by the middle and index fingers. The muscles of the lower extremities remained unaffected. The electrical irritability of all the nerves of the upper extremity was greatly exaggerated, weak currents producing tetanic contractions.

In the left hypochondrium, just below the ribs, a slight bulging could be noticed. This spot was somewhat tender to palpation, and succussion could be heard over it. A few friction sounds were also heard.

During the course of the day the patient had four more attacks: at 8.45 A.M., 10.15 A.M., 2.15 P.M., and 10.45 P.M. They all lasted about twenty minutes.

On March 18, Chvostek's and Trousseau's phenomena were still elicitable.

March 19. Patient had no more tetanic attacks, but Chvostek's sign was still present. Trousseau's sign, however, could not be produced after four minutes. The patient complained of some tenderness about the scar and also in the left epigastrium.

March 23. The patient felt well. Chvostek's and Trousseau's phenomena have disappeared. She complained of a dull and heavy feeling in left arm and forearm.

During the few days when the patient had her tetanic attacks there was a slight rise of temperature (100-101° F.). The urine was somewhat decreased in quantity, but that was probably due to the restricted amount of fluids taken. It was otherwise perfectly normal. The percentage of chlorides fluctuated between 0.73 per cent. (4.8 in twenty-four hours) to 1.5 per cent.

The general condition of the patient was always good. The pulse was full, regular, and of good quality; the appetite was good, and *she never vomited*, nor did she have regurgitation of sour fluid or gas from the stomach.

Tetany (the name was introduced by Lucien Corvisart in 1852)<sup>2</sup> in gastro-intestinal derangements is not very frequent. According to Riegel (*Erkrankungen des Mageus Teil I*), there are about forty such cases reported in literature. Kussmaul was the first one to call attention to this complication in cases of motor insufficiency and gastric dilatation, caused by gastric ulcer and carcinoma of the pylorus associated with hypersecretion. Bouveret and Devic<sup>3</sup> thought that this hypersecretion was the main cause, and that gastric tetany occurred exclusively in this condition. But Fleiner, according to Kaufmann,<sup>4</sup> reported some cases where hypersecretion was absent. Four different theories were brought forward to explain these spasms.

1. *Kussmaul's Theory*. He thought they were due to the loss of water from the tissues in the body, analogous to similar spasms occurring with Asiatic cholera and cholera nostras.

2. *Reflex Theory*. There are some cases recorded in which spasms occurred after the use of the stomach-pump. Müller<sup>5</sup> observed a case where he could produce an attack by slightly tapping the region of the stomach.

3. *Intoxication Theory*. This theory was advanced by Albu.<sup>6</sup> According to him, the resorption of toxins from the gastro-intestinal tract is to be held responsible.

4. *The Loss of Chlorides in the Tissues*. This theory was advanced by Korszynski and Jaworski in 1891. To this theory very little attention has been paid by the various authors who have written on the subject. Sufficient importance to this theory is given only by J. Kaufmann in his admirable article on *Gastrosuccorrhœa*.<sup>7</sup>

In looking over the reported cases of tetany following gastric disturbances, the largest number was associated with

a large amount of hypersecretion of a gastric fluid, very rich in hydrochloric acid. At the same time the chlorides in the urine were diminished or entirely wanting. As the amount of food taken by these patients is very small, one can easily see that the loss of chlorides for the body can under such circumstances be large enough to seriously disturb the nutritive equilibrium of the tissues.

As we study the cases and try to explain them by the theories promulgated, we find that the same theory is not applicable to all cases. The idea that an intoxication is the main cause of these tetanic attacks has been accepted by a good many investigators. The rise of temperature that almost invariably accompanies the attack speaks in favor of this. In some regions, epidemics of tetany arise, as for instance in Vienna during the months of March and April.<sup>8</sup> Another strong point in favor of the intoxication theory is the possibility of saving a patient by gastro-enterostomy, thereby allowing the stagnated noxious masses in the stomach to be evacuated into the bowels and eliminated from the body.

Whatever the true cause of tetany in consequence of gastric disturbances may be, there is one striking feature about this disease, and that is its rarity. When we consider the large number of cases of motor insufficiency and hypersecretion of the stomach, from whatever cause, are yearly treated in private and hospital practice, the small number of tetany cases is surprising. The possibilities of exsiccation of the tissues, of reflex disturbances, intoxication, and loss of chlorides are given in almost every such case. All these causes, however, are not sufficient; there must be in addition a special vulnerability of the nervous system. If we analyze our case, there are some features of interest connected with it.

1. The attack came on after an operation upon the stomach.
2. The patient never suffered from any condition which is known to lead to tetany.
3. The attacks were light. The patient recovered entirely. Tetany in the course of severe gastric diseases usually

terminates fatally. So far only a few cases have been saved by gastro-enterostomy. The mortality, according to Riegel, is as high as 70 per cent. The cause in our case was most probably also an intoxication. When the attacks began, the patient had some bulging in the epigastrium, caused undoubtedly by a distended stomach. One could hear the splashing of the fluid. The cause of retention in our case was probably a motor insufficiency of the muscular wall of the stomach caused by the severe trauma of the operation. This insufficiency was doubtless only a temporary one, for the patient never vomited. In consequence of the irritation that the retained fluid exerted upon the muscular and nervous apparatus of the stomach, the muscular wall contracted and emptied its noxious contents through the patent pylorus into the intestine. As soon as the poison was eliminated, the intoxication came to an end and the patient recovered entirely. The amount of toxins must have been very small, but, as our patient was of a decided neurotic taint, it sufficed to produce enough irritation upon her easily vulnerable nervous system to lead to an attack of tetany.

## REFERENCES.

- <sup>1</sup> v. Bergmann, Bruns, v. Mikulicz. Handbuch d. pr. Chirurgie.
- <sup>2</sup> R. Russel. Alcott's System, vol. viii.
- <sup>3</sup> Cit. after Riegel.
- <sup>4</sup> F. Kaufmann. Remarks on Gastrosuccorrhœa, etc., American Journal of the Medical Sciences, April, 1904.
- <sup>5</sup> Cit. after Riegel.
- <sup>6</sup> Archiv f. Verdauungskrankheiten, Band iv.
- <sup>7</sup> Loc. cit.
- <sup>8</sup> Oppenheim. Lehrbuch d. Nervenkrankheiten.